

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-3 (canceled)

Claim 4 (currently amended): An environmental control system according to claim 3 24, wherein a refrigerant flows through said loop and heat from said compressed air is transferred to said refrigerant in said ~~evaporation means~~ evaporator.

Claim 5 (currently amended): An environmental control system according to claim 4, wherein said loop further includes means for compressing said refrigerant exiting said ~~evaporation means~~ evaporator.

Claim 6 (original): An environmental control system according to claim 5, further comprising said external air compression means comprising a first compressor, said refrigerant compressing means comprising a second compressor, and means for driving said first and second compressors.

Claim 7 (original): An environmental control system according to claim 6, wherein said driving means comprises a turbine and means for supplying engine bleed air to said turbine.

Claim 8. (currently amended): An environmental control system ~~according to claim 7,~~
~~further~~ for an aircraft comprising:

means for receiving air external to the aircraft;

means for compressing said external air to a desired pressure;

means for cooling said compressed air to a desired temperature;

said cooling means comprising a vapor compression cycle;

said vapor compression cycle loop including evaporation means for removing heat from said compressed air, a refrigerant flowing through said loop and heat from said compressed air being transferred to said refrigerant in said evaporation means, and means for compressing said refrigerant exiting said evaporation means;

said external air compression means comprising a first compressor, said refrigerant compressing means comprising a second compressor, and means for driving said first and second compressors;

said driving means comprising a turbine and means for supplying engine bleed air to said turbine; and

said first and second compressors and said turbine being located on a single shaft.

Claim 9 (original): An environmental control system according to claim 5, wherein said loop further includes means for removing heat from said compressed refrigerant.

Claim 10 (currently amended): An environmental control system ~~according to claim 9,~~
~~wherein~~ for an aircraft comprising:

means for receiving air external to the aircraft;

means for compressing said external air to a desired pressure;

means for cooling said compressed air to a desired temperature;

said cooling means comprising a vapor compression cycle;

said vapor compression cycle loop including evaporation means for removing heat from said compressed air, a refrigerant flowing through said loop and heat from said compressed air being transferred to said refrigerant in said evaporation means, and means for compressing said refrigerant exiting said evaporation means;

said loop further including means for removing heat from said compressed refrigerant; and

additional external air is being supplied to said loop and said heat removing means ~~comprises~~ comprising a condenser for receiving said compressed refrigerant from said refrigerant compressing means and for transferring heat from said refrigerant to said additional external air.

Claim 11 (original): An environmental control system according to claim 10, wherein said loop further includes means for reducing pressure in said refrigerant exiting said heat removing means.

Claim 12 (original): An environmental control system according to claim 11, wherein said pressure reducing means comprises an expansion valve.

Claim 13 (currently amended): An environmental control system according to claim 1 ~~24~~, further comprising said delivering means comprising means for delivering said cooled air to a cabin onboard said aircraft.

Claim 14 (original) An environmental control system according to claim 13, further comprising means for removing moisture from said external air prior to delivering said cooled air to said cabin.

Claim 15 (original): An environmental control system according to claim 14, wherein said moisture removing means comprises a water separator.

Claim 16 (canceled)

Claim 17 (currently amended): A method according to claim ~~16~~ 25, further comprising removing moisture from said cooled external air prior to delivering said cooled external air to said compartment.

Claim 18 (canceled)

Claim 19 (original): A method according to claim 18, further comprising compressing said refrigerant exiting said evaporator using a refrigerant compressor.

Claim 20 (currently amended): A method ~~according to claim 19, further comprising for~~ delivering cooled air at a desired pressure to a compartment on an aircraft comprising the steps of:

providing an air compressor;

inputting air external to said aircraft into said air compressor and compressing said external air;

cooling said external air after said external air exits said air compressor;

delivering said cooled external air to said compartment;

said cooling step comprising providing a refrigerant loop having an evaporator through which a refrigerant flows and passing said compressed external air through said evaporator and transferring heat from said compressed external air to said refrigerant;

compressing said refrigerant exiting said evaporator using a refrigerant compressor; and

providing a turbine, bleeding air from an engine to drive said turbine, and driving both said air compressor and said refrigerant compressor using said turbine.

Claim 21 (currently amended): A method ~~according to claim 19, further comprising~~ for delivering cooled air at a desired pressure to a compartment on an aircraft comprising the steps of:

providing an air compressor;

inputting air external to said aircraft into said air compressor and compressing said external air;

cooling said external air after said external air exits said air compressor;

delivering said cooled external air to said compartment;

said cooling step comprising providing a refrigerant loop having an evaporator through which a refrigerant flows and passing said compressed external air through said evaporator and transferring heat from said compressed external air to said refrigerant;

compressing said refrigerant exiting said evaporator using a refrigerant compressor; and

providing said loop with heat removal means, supplying additional external air to said heat removal means, and transferring heat from said compressed refrigerant to said additional external air by passing said compressed refrigerant through said heat removal means.

Claim 22 (original): A method according to claim 21, further comprising reducing pressure of said refrigerant exiting said heat removal means and passing said refrigerant at said reduced pressure to said evaporator.

Claim 23 (currently amended): A method according to claim 16 25, wherein said delivering step comprises delivering said cooled external air to a cabin onboard said aircraft.

Claim 24 (new): An environmental control system for an aircraft comprising:

means for receiving air external to the aircraft;

means for compressing said external air to a desired pressure;

means for cooling said compressed air to a desired pressure;

said cooling means comprising a vapor compression cycle loop;

said vapor compression cycle loop containing an evaporator for removing heat from said compressed air; and

means for delivering air exiting said compressing means directly to said evaporator and for delivering cooled air exiting said evaporator to a compartment onboard said aircraft.

Claim 25 (new): A method for delivering cooled air at a desired pressure to a compartment on an aircraft comprising the steps of:

providing an air compressor;

inputting air external to said aircraft into said air compressor and compressing said external air;

cooling said external air after said external air exits said air compressor;

said cooling step comprising providing a refrigerant loop having an evaporator through which a refrigerant flows and passing said external air through said evaporator and transferring heat from said compressed external air to said refrigerant; and

delivering said external air exiting said compressor directly to said evaporator;
and

delivering said air exiting said evaporator to said compartment.